

# History and Scope of Pharmacognosy

Unit 1<sup>st</sup>



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# Objectives

On completion of this period, you would be able to know

- History
- Present status and future prospects and
- Scope of Pharmacognosy in India

# Known to Unknown

1. You might have heard the term Botany
2. What is Botany? What it deals with?
3. Have you ever heard the term Pharmacognosy?
4. If so, what it deals with?

# History of Pharmacognosy

- Nature always stands as a golden mark to

exemplify the outstanding phenomenon of

Symbiosis

# History of Pharmacognosy

Plants were used medicinally in

- China
- India
- Egypt
- Greece before beginning of the Christian era .

# History of Pharmacognosy

The Chinese system of medicine is still prevalent.

- Internal medicine Huang Di Nei Jing

Which is believed to be prepared between 200 BC

and 100 AD

# History of Pharmacognosy

Ayurveda is based on the hypothesis that

- Everything in the universe is composed of five basic Elements.

# History of Pharmacognosy

Space

Air

Energy

Water

Matter

# History of Pharmacognosy

The oldest known herbal is Pen-tsao by

Emperor Shen Nung

# History of Pharmacognosy

A large portion of Indian population even today depends on the

Indian System of Medicine – Ayurveda

an ancient Science of Life

# History of Pharmacognosy

- The progress achieved in Botanical studies
- During 19<sup>th</sup> Century had a direct influence on

Pharmacognosy.

# History of Pharmacognosy

- Oldest documents Papyrus Ebers written in 1500 B.C.
- Hippocrates 460 – 360 B.C known as Father of Medicine

Served the basis of discovery of medicines.

# History of Pharmacognosy

## Aristotle

- Greek Philosopher
- Father of Natural History
- Made valuable contributions to Unani.

# History of Pharmacognosy

## Homoeopathic system

Developed in 18<sup>th</sup> Century

- By Samuel Hahnemann
- A German Physician and Chemist
- In this System drug treatment is not specified.

# History of Pharmacognosy

- Siddha system of medicine
  - Like Ayurveda, this system believes that all objects in universe are made up of five basic Elements

# History of Pharmacognosy

- Naturopathy is not a system of treatment which is based on laws of Nature.
- Attention is paid to purificatory measures use of Hydrotherapy.

# History of Pharmacognosy

- Bach Flower Remedies were discovered by Edward Bach in the 20<sup>th</sup> Century
- 38 remedies prepared from flowers of wild plants, bushes or trees.

# History of Pharmacognosy

- Aromatherapy begin in 4500 B.C.
- Egyptians used aromatic substances in medicines
- Prof. Gantle Fosse a French cosmetic chemist  
coined the term Aromatherapy.

# History of Pharmacognosy

- Theophrastus 370 – 287 B.C presented about the  
Plant kingdom.
- Dioscorides in 78 A.D gave his work De Materia  
Medica.

# History of Pharmacognosy

- Greek pharmacist Galen 131 – 200 A.D.

Described various methods for preparations of  
Extracts.

- Materia Medica was used for compilation of all  
details about Natural products.

# History of Pharmacognosy

- Therapeutic properties of plants described in Rigveda and Atharva Veda.
- Sarasparilla coined the word Pharmacognosy by two words.

# History of Pharmacognosy

- Pharmakon = a drug and
- Gignosco = to acquire knowledge of it
- Pharmacognosy is scientific and systematic study of
  - Structural
  - Physical
  - Chemical
- Biological aspects of Crude Drugs.

# History of Pharmacognosy

- An Anatomical Atlas of Powdered Vegetable Drugs  
was compiled in 1904 by Greenish and Collin

# Development of Pharmacognosy

- Modern Pharmacognosy occurred during 1934 – 1960.
- This development was mainly due to some events like:
  - Discovery of Pencillin in 1928
  - Isolation of Resperine 1952
  - Anticancer properties of *Vinca rosea*
  - Discovery of *Dioscorea* was utilised to prepare semi-synthetic steroidal hormones.

# Development of Pharmacognosy

- Pharmacognosy as an applied science
- Played a crucial role in the development of different disciplines of science.

# Development of Pharmacognosy

- Pharmacognosy is an important link between

Pharmacology and Medicinal Chemistry

# Development of Pharmacognosy

Natural products got more and more therapeutic importance with developments like:

- Isolation of therapeutically active constituents
- Their identification and structure elucidation.
- There is close link between structure and  
Pharmacological action.

# Development of Pharmacognosy

- Natural products served the purpose of precursor for synthesis of several medicinally important compounds.
- Some isolated components from plants were made into different formulations and used as drugs.

# Development of Pharmacognosy

It was during this period only

- That step by step processes in Biosynthesis of Primary and Secondary metabolites were presented before the world.

# Development of Pharmacognosy

## Knowledge of

- Plant taxonomy
- Plant breeding
- Plant pathology
- Plant genetics

Is helpful in the development of cultivation technology for medicinal and aromatic plants.

# Present Status and Future Prospects

- Now the people have realized the utility of drugs of natural origin which are not only economical but even safer too.
- Active constituents from plant sources have lead to rapid developments in Pharmacognosy and Phytochemistry.

# Present Status and Future Prospects

- Rapid developments in the fields of Chemistry

Biochemistry and Pharmacology have further

supported advancements in Pharmacognosy.

# Present Status and Future Prospects

## Plants like

- Podophyllum
- Liquorice
- Valerian
- Artemisia
- Veratrum

Earlier considered to be less important but their re-evaluation have established their utility.

# Scope of Pharmacognosy

- World Health Organisation has emphasized the utilization of Indigenous systems of medicine based on folklore and locally available plant materials.
- Large scale scientific cultivation of some of the medicinally important plants is necessary.

# Scope of Pharmacognosy

- Some of the products like Balsam of Tolu and Peru Benzoin, Storax, Asafoetida, Colocynth etc.,
- If large scale cultivation of these drugs producing plants is started we can save huge amount on Foreign currency.

# Scope of Pharmacognosy

- Guggulsterols from *Commiphora mukul*
- Podophyllotoxin from *Podophyllum hexandrum*
- Artemisinin from *Artemisia*
- Annonin and Silymarin from *Silybum maritimum* are approved as drugs in several countries which is encouraging news in the fields of Pharmacognosy

and Phytochemistry.

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# Scope of Pharmacognosy

Although not fully proved clinically

- Siberian ginseng *Eleutherococcus senticosus*
- Korean ginseng *Panax ginseng*
- American ginseng *Panax quinquefolium*
- Ashwagandha with *Ania somnifera* are in use

# Scope of Pharmacognosy

We have not yet devised the cure by modern medicine.

- Only symptomatic relief is our reply as in case of  
Arthritic disorders, AIDS & Cancer.

# Scopes of Pharmacognosy

ISOLATION OR ANALYSIS OF PHYTOCHEMICAL

Nutraceuticals, or “functional foods”



